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## BOTANY.

**Elementary Plant Physiology.**<sup>1</sup> — This new and completely revised edition of the same author's earlier book, *Experimental Plant Physiology*, will without doubt be welcomed by the teacher. The experiments chosen are almost all of the simpler kind, being qualitative rather than quantitative, for which reason they will especially recommend themselves for use in elementary courses.

In the introductory chapter is given a series of selected courses which will serve as useful suggestions to the inexperienced or hurried teacher. At the same time the number of experiments described is sufficiently large to allow of independent choice, so that any course selected from the book may have a certain elasticity — a point of no little importance.

In starting out with the consideration of growth the author has undoubtedly chosen that phase of plant physiology which appeals most strongly to the average student, a fact which warrants the choice, when it is remembered that the object is to introduce the beginner to the subject. The chapters on the exchange of liquids and gases and on the general subject of nutrition are full and seem entirely adequate for the scope of the book. The wisdom of leaving the consideration of the effects of stimulation and correlation (the various trophic phenomena) to the last, in a place removed from the related topic of growth, might be questioned if the evident intention of the author were not taken into consideration. It is clearly his object to impress most strongly upon the student the phenomena connected with general and, on the whole, less complicated problems of plant physiology and to touch lightly upon the more intricate ones connected with correlations of growth. There are many reasons justifying such a treatment in an elementary course, particularly in a course which presumably would not be accompanied by many explanatory lectures or by much reading.

The text is terse and clear, the typography and form of the book excellent, both the author and publisher are to be congratulated on having produced a very acceptable and practically useful laboratory guide.

H. M. R.

**Notes.** — A new botanical publication, the *Recueil de l'Institut Botanique (Université de Bruxelles)*, has been launched by Professor

<sup>1</sup> MacDougal, D. T. *Elementary Plant Physiology*. New York, Longmans, Green & Co., 1902. 8vo, xi + 38 pp., 108 figs.

Errera, after the plan of the "Contributions" from various other scientific establishments and laboratories. It is to contain original contributions and reprints of studies from the laboratory that have been published elsewhere. Rather curiously, it begins with Vol. V, but the first four volumes of the series are definitely planned and are promised for the early future. In form and style the *Recueil* is excellent. As would be expected from Professor Errera's own studies, the contents of this volume, as well as of the other four that are promised, are largely physiological or cytological.

Under the title *The New Phytologist*, a new British journal, edited by Professor Tansley, has made its appearance in London. Among other things, the first number contains "A Revision of the Classification of the Green Algae," by Blackman and Tansley.

A new botanical journal, entitled *Magyar Botanikai Lapok* (*Ungarische Botanische Blätter*), is published at Budapest, beginning with January of this year.

The index to new species and varieties published in Engler's *Botanische Jahrbücher*, Vols. XXVI–XXX, occupies 45 double-column pages of the concluding number of the last-named volume.

The April *Bulletin of the Torrey Botanical Club* contains the following papers: Salmon, "Supplementary Notes on the Erysiphaceæ"; Cook, "Development of the Embryo Sac and Embryo of *Castalia odorata* and *Nymphaea advena*"; Piper, "New and Noteworthy Northwestern Plants, VI"; Arthur, "New Species of Uredineæ, II"; and Rydberg, "Studies on the Rocky Mountain Flora, VIII."

The *Ottawa Naturalist* for March contains papers on the botany of the West and Northwest by Macoun and Greene.

No. 2 of the *Biltmore Botanical Studies*, dated April 30, 1902, contains the following papers: Beadle, "New Species of Thorns from the Southeastern States, II"; Boynton, "Studies in the Genus *Amorpha*"; Boynton, "Two New Southern Species of *Coreopsis*"; Boynton, "Notes from a Collector's Field Book"; Harbison, "A Sketch of the Sand Mountain Flora"; Harbison, "New or Little-Known Species of *Trillium*, II"; Beadle, "Studies in *Philadelphus*"; Beadle, "Two Drupaceous Trees [*Prunus australis* and *P. mitis*] from Alabama."

The January number of the *Bulletin of the Wisconsin Natural History Society* contains the following botanical articles: Brunchen, "Studies in Plant Distribution"; Graenicher, "Flowers adapted

to Flesh-Flies"; Bennett, "Additions to the Flora of Milwaukee County"; and Brown and Fernekes, "Contribution toward a List of Milwaukee County Fungi."

A number of illustrations of botanical interest are contained in the recently published seventh *Report of the Forest, Fish and Game Commission of New York*.

The Engelmann Botanical Club of St. Louis has issued an excellent bulletin on tree planting, giving practical instruction as to what not to do, as well as what to do, in attempting to beautify a city by the growth of trees.

Dr. Urbina, of the *Museo Nacional* of Mexico, has distributed from the *Anales* of that institution a botanical study of the various Zapotes of Mexico.

In a separate recently issued from the *Transactions of the Royal Society of Canada*, Dr. Fletcher writes on the value of nature study in education.

The principles of generic nomenclature are discussed by Mr. Shear in the *Botanical Gazette* for March.

The leaf forms of *Liriodendron* are discussed and figured by Berry in *Torrey* for March.

An account of the acaulescent violets of central New York, by H. D. House, is published in *Torrey* for May.

A new species of *Viola*, *V. angelle*, from New Jersey, is described by Pollard in *Torrey* for February.

A yellow-fruited form of *Ilex myrtifolia* is noted by R. M. Harper in *Torrey* for March.

*Ailanthus grandis*, a new Indian species, is described and figured by Prain in *The Indian Forester* for April; he also gives comparative notes on the other species of the genus and their distribution.

The morphology and anatomy of *Azorella Schlegelii* are treated by Charlotte Ternetz in Heft 1 of Abtheilung 1 of the *Botanische Zeitung* for this year.

Continuing his studies of Ochnaceæ, Van Tieghem, in the April *Journal de Botanique*, separates from the old genus *Ochna* the new genera *Ochnella*, *Porochna*, and *Discladium*, giving differential keys for the genera of the tribe Ochneæ as so constituted.

A new *Zauschneria*, *Z. arizonica*, is described by Dr. Davidson in the *Bulletin of the Southern California Academy of Sciences* for January,—the initial number of this publication.

Dr. Weber, who in former years studied *Opuntias* with Engelmann, has issued separates, from the *Bulletin de la Société Nationale d'Acclimatation de France*, of an article on the species (*O. leucotricha*) which furnishes the prized "Duraznillo," or peach prickly pear of the high table-lands of Mexico, and its immediate relatives.

An interesting account of the hallucinations caused by taking an infusion of *Anhalonium lewinii* is published by Havelock Ellis in the *Popular Science Monthly* for May.

A photogram of *Echinocactus texensis* is published in the *Monatschrift für Kakteenkunde* for April 15.

In No. 7 of the current volume of botanical *Proceedings of the California Academy of Sciences*, Miss Eastwood gives a key to fifty-seven species and varieties of *Ribes* recognized as occurring on the Pacific coast, and describes nine species as new.

Matsumura publishes a list of the wild and cultivated Leguminosæ of Japan, Loochoo, and Formosa, in the *Tokyo Botanical Magazine* of March 20.

M. Theuriet, an amateur of roses, published an illustrated classified list of the 6781 species and varieties cultivated at l'Haÿ, France.

Blanchard has a note on the Vermont chokeberries in *Rhodora* for March.

In *Pharmaceutical Archives* for April, Mr. Denniston publishes a paper on the general and bark characters of *Viburnum ellipticum*.

A large and fully illustrated paper on the comparative embryology of the Rubiaceæ, by F. E. Lloyd, constitutes Vol. VIII, No. 1, of the *Memoirs of the Torrey Botanical Club*.

An account of *Primula parryi*, with an excellent half-tone illustration, is published by Knowlton in *The Plant World* for February.

*Scrophularia glabrata*, from Arizona, is described and figured by Davidson in the March *Bulletin of the Southern California Academy of Sciences*.

The seeding of *Plantago fastigiata* is the subject of a paper by Griffiths in the *Bulletin of the Torrey Club* for March.

*Peperomia davisii*, from St. Kitts, is described by Britton in *Torreya* for March.

A cockscomb fasciation of the pineapple is noted by Harshberger in the concluding part for 1901 of the *Proceedings of the Academy of Natural Sciences of Philadelphia*.

In the *Botanical Gazette* for April, DONNELIA C. B. Clarke is proposed for the reception of *Callisia grandiflora* Donnell Smith. The new genus constitutes one of the many segregates of *Tradescantia*.

An interesting account of the harvesting, curing, and cleaning of the seed of *Poa pratensis*, the standard lawn grass of the United States, forms *Bulletin No. 19* of the Bureau of Plant Industry of the Department of Agriculture, by Pieters and Brown.

E. D. Merrill publishes some notes on *Sporobolus* in *Rhodora* for March.

A study of the *Zamias* of Florida, by Wieland, is published in *The American Journal of Science* for May.

The North American genera of *Aspidieæ* are discussed by Underwood in the *Bulletin of the Torrey Botanical Club* for March. A key is given to the genera.

The evergreen ferns of New England are considered by Davenport in *Rhodora* for March.

In *The Fern Bulletin* for April Mr. Maxon proposes the restoration of Liebman's name *Asplenium resiliens* for what is commonly known as *A. parvulum*.

In an article on "The Logfern" (*Dryopteris Cristata Clintoniana*), Mr. William Palmer gives a key to the *cristata* and *Goldieana* groups of that genus, in *The Fern Bulletin* for April.

The mechanical expulsion of the brood bodies of several species of *Lycopodium* is noted by Lloyd in *Torreyæ* for February.

Several species of *Lycopodium*, and the propulsion of the gemmæ of some species, are considered by Mr. Leavitt in *Rhodora* for March.

The tenth of Mr. Alvah Eaton's papers on the genus *Equisetum* in North America, in *The Fern Bulletin* for April, deals with the varieties of *E. litorale*.

A monograph of the *Lejeuneæ* of the United States and Canada, by Evans, constitutes Vol. VIII, No. 2, of the *Memoirs of the Torrey Botanical Club*.

Two new western mosses are described and figured by R. S. Williams in the February *Bulletin of the Torrey Club*.